EXECUTIVE SUMMARY

The Hill Air Force Base (HAFB) Environmental Management Directorate, Restoration Division (EMR) is conducting a Remedial Investigation (RI) at Little Mountain Test Annex (LMTA), Operable Unit A (OU A), HAFB, Utah. Chlorinated solvent and metals contamination has been detected at the former LMTA water treatment plant sludge drying beds site including contamination in vadose zone bedrock and dissolved chlorinated solvent contamination in groundwater beneath, and a distance away from, the sludge drying beds.

The activities presented in this *Work Plan for Little Mountain Test Annex Operable Unit A Remedial Investigation, 2003 Program* were selected based on findings and results from earlier RI studies and the recent 2002 OU A LMTA RI that focused on the depth of environmental contamination at the now disused sludge drying beds site and in nearby and downgradient areas suspected to be impacted by the dissolved contamination in groundwater. The primary contaminants of concern found in groundwater near the drying beds are trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), methylene chloride, and phenol at concentrations substantially exceeding Federal and State maximum contaminant levels (MCLs) for drinking water and groundwater. The depth of contamination near the drying beds was not established; however, a TCE concentration exceeded the MCL for this compound at a depth of 300 feet below ground surface. An area north and west of the sludge drying beds and west southwest of a former fire suppression water pond, where only TCE was detected in groundwater, also was identified. This TCE contamination may be related to a source separate from the sludge drying beds. Dissolved contamination was found to extend to the Air Force property boundary, south of the former sludge drying beds. TCE and cis-1,2-DCE were detected near the south property boundary at concentrations that also exceeded Federal and State MCLs for drinking water and groundwater.

Consequently, the 2003 LMTA OU A RI has been focused to evaluate the depth of contamination in groundwater within and near the sludge drying beds, evaluate the concentrations of contaminants in the vadose zone beneath the sludge drying beds, evaluate the potential for contamination in sediments beneath the disused fire suppression water pond north of the drying beds (north pond), and evaluate the potential for contamination in the lake plain sediments south of the Air Force property boundary. This *Work Plan for Little Mountain Test Annex Operable Unit A Remedial Investigation, 2003 Program* provides rationale and establishes procedures for the OU A investigation work described below.

SCOPE OF WORK

The following tasks are consistent with the Task Order Statement of Work (SOW) issued by HAFB (25 March 2003) and comprise the scope of work for this 2003 LMTA OU A RI:

Task 1 Perform general planning and develop a schedule for preparation of this work plan, conduct of fieldwork, data handling and analysis, and reporting activities.

Task 2 Perform project coordination and conduct planning meetings.

Task 3 Prepare the work plan for this 2003 OU A LMTA RI.

Task 4 Conduct field sampling activities that include:

1. Obtaining sediment cores at three locations beneath the north pond and analyzing core samples for volatile organic compounds (VOCs) by Solid Waste (SW) 5035/SW8260B. The core holes will be drilled to the depth of 50 feet and six samples per core will be collected for analysis.

2. Installation and development of 12 groundwater monitoring wells (four 3-well nests); sampling and analysis of groundwater from the 12 new monitoring wells and 46 existing monitoring wells (two events). The groundwater will be analyzed for VOCs by SW8260B, semi-volatile organic compounds (SVOCs) by SW8270C, diesel range organics (DRO) and gasoline range organics (GRO) total petroleum hydrocarbon (TPH) by SW8015M, the light gases methane, ethane, and ethene by RSK-175; the cations calcium, magnesium, manganese, total iron, potassium, and sodium by SW6010B; the anions bromine, chlorine, nitrite, nitrate, sulfate, and phosphate by U.S. Environmental Protection Agency (USEPA) Method 300.1; total organic carbon by SW9060; alkalinity/carbonate by USEPA 310.1; and perchlorate and explosives by USEPA 300 and SW8330, respectively, in selected wells. In addition, the conductivity, potential of hydrogen (pH), temperature, dissolved oxygen, oxidation-reduction potential, and turbidity will be measured at the time of sampling.

3. Installation of two vadose zone vapor wells within the sludge drying beds and vapor extraction testing of the two vapor wells. The vapor samples will be analyzed for VOC target compounds by USEPA Method TO-15 (gas chromatography/mass spectrometry analysis) and for methane, ethane, and ethene by gas chromatography/flame ionization detector analysis.

4. Performing three rounds of groundwater elevation monitoring for all new and existing monitoring wells.

5. Performing other related activities to accomplish the field program.

Task 5 Performing data validation and data management.

Task 6 Performing investigation-derived waste characterization and handling in accordance with the *Final Basewide Investigation-Derived Waste Work Plan* (Radian, 1995), recent HAFB guidance, and *Final Water IDW System Description and Standard Operating Procedure for Remedial Investigation Activities* (Parsons, 2002a).

Task 7 Preparing a strategic plan update for site management and remedial planning.

Task 8 Incorporation of the north pond sediment contaminant data, sludge drying beds vadose zone vapor contaminant data, and the sludge drying beds monitoring well and off-site piezometer groundwater investigation data into a data summary report and continued development and refinement of the LMTA OU A site conceptual model.